

CHAPTER 4. RECOMMENDED IMPROVEMENT PLAN

The Iowa section of the Mississippi River Trail requires the fusion of many road improvement and trail building projects with existing bicycle facilities, detailed in the recommended improvement plan for the Iowa MRT. This chapter outlines the cost estimates of the recommended Iowa MRT, suggests “demonstration projects” for the MRT, defines all recommended projects for the MRT by improvements needed to build bicycle lanes or trails, and suggests a general timeframe in which to complete the projects.

However, the completion of the Iowa MRT not only depends upon the completion of these recommended rural improvements but also upon each city’s commitment to the development of the trail. The trail will not be complete without the creation of urban cycling routes through each city the MRT visits. The urban trails integrated into the MRT will also allow cyclists access to needed services and amenities, a requirement for any trail. Tables 4.1 and 4.2 provide estimated urban trail mileages for the Iowa MRT, then break these mileages down by project status: existing facilities, programmed facilities, and facilities to build.

This chapter outlines the recommended rural MRT projects and their associated costs; it does not address the needed urban trails to complete the Iowa Mississippi River Trail. Rather, each municipality along the MRT is strongly encouraged to explore bicycle facility options for the MRT to connect to the recommended rural routes. While bicycle lanes and trails are preferred, cities may also place the MRT on appropriate urban roads to share the road with vehicle traffic. To ensure the safety of MRT cyclists, cities along the route are encouraged to work cooperatively with the Iowa DOT to place the MRT on suitable roads.

Table 4.1. MRT Urban Trail Projects Status: Allamakee to Clinton Counties

County	Estimated MRT Length (miles)	Estimated Existing Urban Trails Length (miles)	Estimated Programmed Urban Trails Length (miles)	Estimated Urban Bicycle Facilities to Designate or Improve (miles)
ALLAMAKEE				
New Albin	0.50			0.50
Lansing	1.77			1.77
Guttenberg	0.84			0.84
<i>Allamakee Total</i>	<i>3.11</i>			<i>3.11</i>
CLAYTON				
Marquette	1.93		0.97	0.96
McGregor	1.53		0.77	0.76
Clayton	3.70			3.70
Millville	0.25			0.25
N. Buena Vista	1.17			1.17
<i>Clayton Total</i>	<i>8.58</i>		<i>1.74</i>	<i>6.84</i>
DUBUQUE				
Balltown	0.35			0.35
Sherrill	0.66			0.66
Sageville	0.14			0.14
Dubuque	6.71	1.00	5.71	
<i>Dubuque Total</i>	<i>7.86</i>	<i>1.00</i>	<i>5.71</i>	<i>1.15</i>
JACKSON				
Saint Donatus	0.50			0.50
Bellevue	1.59			1.59
Miles	0.75			0.75
<i>Jackson Total</i>	<i>2.84</i>			<i>2.84</i>
CLINTON				
Andover	0.50			0.50
Clinton	7.89	3.40		4.49
Low Moor	0.50			0.50
<i>Clinton Total</i>	<i>8.89</i>	<i>3.40</i>		<i>5.49</i>

Table 4.2. MRT Urban Trail Projects Status: Scott to Lee Counties and Total

County	Estimated MRT Length (miles)	Estimated Existing Urban Trails Length (miles)	Estimated Programmed Urban Trails Length (miles)	Estimated Urban Bicycle Facilities to Designate or Improve (miles)
SCOTT				
Princeton	1.83		1.83	
Le Claire	3.95		1.58	2.37
Riverdale	1.21			1.21
Bettendorf	5.69	1.36	1.63	2.70
Davenport	10.36	6.98	3.38	
Buffalo	4.05			4.05
<i>Scott Total</i>	<i>27.09</i>	<i>8.34</i>	<i>8.42</i>	<i>10.33</i>
MUSCATINE				
Muscatine	4.75	2.20		2.55
<i>Muscatine Total</i>	<i>4.75</i>	<i>2.2</i>		<i>2.55</i>
LOUISA				
Oakville	0.57			0.57
<i>Louisa Total</i>	<i>0.57</i>			<i>0.57</i>
DES MOINES				
Burlington	5.70			5.70
<i>Des Moines Total</i>	<i>5.70</i>			<i>5.70</i>
LEE				
Fort Madison	5.86			5.86
Montrose	2.33			2.33
Keokuk	7.00			7.00
<i>Lee Total</i>	<i>15.19</i>			<i>15.19</i>
TOTAL	84.58	14.94	15.87	92.35

Costs of Recommended Improvements

The costs of creating the Mississippi River Trail in Iowa are dependent upon the types of construction projects required for each segment of road or trail to meet MRT standards. As previously discussed, bicycle lanes will be created on roads by constructing 6-foot asphalt shoulders at a cost of \$107,000 per mile (Iowa DOT 2000). Non-motorized 10-foot-wide asphalt off-road bicycle trails may be constructed at a cost of \$85,344 per mile. In addition to these costs, structural improvements may be necessary for the roadway to accommodate bicycle trails. Structures on roadways may be re-decked to include bicycle lanes at a cost of \$50 per square foot, assuming a 6-foot wide bicycle lane.

Tables 4.3–4.8 provide additional information on each of these corridors. The tables are placed in order by county from north to south. Each corridor is denoted by its county, its signed route number, a description of the endpoints of the corridor, and whether the corridor requires structural accommodations in addition to shoulder improvements. The total cost of the recommended plan for the Iowa MRT is estimated at \$32.6 million, which includes a 10 percent allocation for other costs and a 15 percent allotment for contingency costs. Tables 4.9 and 4.10 provide estimated costs per county for various categories of MRT projects, as well as estimated total costs. The figures for overall costs for the state of Iowa are found in Table 4.11, including a breakdown of the estimated subtotal, other, contingency, and total costs of the Iowa portion of the Mississippi River Trail.

The MRT mileages by jurisdiction can be calculated from the tables to determine jurisdictional responsibilities in implementing the Iowa section of the Mississippi River Trail. The state of Iowa will be responsible for an estimated 99 miles of roadway to be improved for bicycle lanes, while individual counties will be responsible for approximately 125 miles of the Iowa MRT. There are also county jurisdiction off-road trails that will need to be funded. In addition, individual municipalities have jurisdiction over approximately 54 miles of the Iowa MRT. Altogether, these mileages add up to approximately 278 miles of bicycle facilities that will be created as part of the Iowa Mississippi River Trail. Table 4.12 shows the breakdown of estimated costs to each county involved in the MRT project. These estimated costs include the creation of bicycle lanes on county roadways, and off-road trail projects that will be under county jurisdiction. Similarly, Table 4.13 displays the estimated costs of the MRT project to the state, broken down by costs per county.

Table 4.3. MRT Corridor Descriptions, Jurisdictions, and Recommended Improvements: Allamakee to Clinton Counties

County	Road Number or Trail/Lane Name	From (N or E)	To (S or W)	Jurisdiction	Status/Improvements for MRT
Allamakee	26	New Albin	Lansing	State	Programmed for bicycle lanes
	X52	Lansing	Harpers Ferry	County	Addition of 6' wide paved shoulders
	364	Harpers Ferry	Highway 76	State	Addition of 6' wide paved shoulders
	Trail of Two Cities MRT Connection	Highway 364	Clayton County Border		Construction of 10' asphalt bicycle trail
	Trail of Two Cities MRT Connection	Allamakee County Border	Trail of Two Cities		Construction of 10' asphalt bicycle trail
	Trail of Two Cities	T of TC MRT Connection	T of TC MRT Connection	Municipal	Planned bicycle trail
	Trail of Two Cities MRT Connection	Trail of Two Cities	Highway 340		Construction of 10' asphalt bicycle trail
Clayton	340	McGregor	X56	State	Addition of 6' wide paved shoulders
	X56	Highway 340	Guttenberg	County	Addition of 6' wide paved shoulders
	52	Guttenberg	Millville	State	Addition of 6' wide paved shoulders
	C9Y	Millville	Dubuque County Border	County	Addition of 6' wide paved shoulders
Dubuque	C9Y	Clayton County Border	Reigler Road/90E1	County	Addition of 6' wide paved shoulders
	Reigler Road/90E1	C9Y	C65	County	Addition of 6' wide paved shoulders
	C65	Reigler Road/90E1	Sherrill	County	Addition of 6' wide paved shoulders
	C9Y	Sherrill	Sageville	County	Addition of 6' wide paved shoulders
	Heritage Trail MRT Connection	C9Y	Heritage Trail Extension	County	Construction of 10' asphalt bicycle trail
	Heritage Trail Extension	H.T. MRT Extension	Dubuque		Programmed bicycle trail
	Olde Massey Road/88E3	Mines of Spain	U.S. 52	County	Addition of 6' wide paved shoulders
	52	Olde Massey Rd.	Jackson County Border	State	Sections of addition of 6' wide paved shoulders
Jackson	52	Dubuque County Border	St. Donatus	State	Addition of 6' wide paved shoulders
	52	St. Donatus	Bellevue	State	Sections of addition of 6' wide paved shoulders
	52	Bellevue	Z40	State	Addition of 6' wide paved shoulders
	Z40	U.S. 52	Clinton County Border	County	Addition of 6' wide paved shoulders
Clinton	Z40	Jackson County Border	E44	County	Addition of 6' wide paved shoulders
	E44	Z40	Z50	County	Addition of 6' wide paved shoulders
	Z50	E44	E50	County	Addition of 6' wide paved shoulders
	E50	Z50	U.S. 67	County	Addition of 6' wide paved shoulders
	67	E50	Clinton	State	Addition of 6' wide paved shoulders
	F12	Clinton	Z36	County	Addition of 6' wide paved shoulders
	Z36	F12	U.S. 67	County	Addition of 6' wide paved shoulders
	67	Z36	Scott County Border	State	Addition of 6' wide paved shoulders

Table 4.4. MRT Corridor Descriptions, Jurisdictions, and Recommended Improvements: Scott to Lee Counties

County	Road Number or Trail/Lane Name	From (N or E)	To (S or W)	Jurisdiction	Status/Improvements for MRT
Scott	67	Clinton County Border	Le Claire	State	Addition of 6' wide paved shoulders
	67	Le Claire	Bettendorf	State	Sections of addition of 6' wide paved shoulders
	22	Buffalo	Muscatine County Border	State	Addition of 6' wide paved shoulders
Muscatine	22	Scott County Border	Wildcat Den Avenue	State	Addition of 6' wide paved shoulders
	Wildcat Den Avenue	Highway 22	New Era Road	County	Addition of 6' wide paved shoulders
	New Era Road	Wildcat Den Avenue	Sweetland Road	County	Addition of 6' wide paved shoulders
	Sweetland Road/77E1	New Era Road	Highway 22	County	Addition of 6' wide paved shoulders
	22	Sweetland Road	Muscatine	State	Sections of addition of 6' wide paved shoulders
	X61	Muscatine	Louisa County Border	County	Addition of 6' wide paved shoulders
	X61	Muscatine County Border	E Avenue	County	Addition of 6' wide paved shoulders
	E Avenue	X61	X61	County	Programmed for road paving/needs 6' paved shoulders
Louisa	X61	E Avenue	Highway 99	County	Addition of 6' wide paved shoulders
	99	X61	Des Moines County Border	State	Addition of 6' wide paved shoulders
	99	Louisa County Border	Burlington	State	Addition of 6' wide paved shoulders
	X62	Burlington	Old U.S. Highway 61	County	Addition of 6' wide paved shoulders
	Old U.S. Highway 61	X62	U.S. 61	County	Addition of 6' wide paved shoulders
Lee	61	Old U.S. Highway 61	Lee County Border	State	Addition of 6' wide paved shoulders
	61	Des Moines County Border	X50	State	Addition of 6' wide paved shoulders
	X50	U.S. 61	354th Avenue/6803	County	Addition of 6' wide paved shoulders
	354th Avenue/6803	X50	J48	County	Addition of 6' wide paved shoulders
	J48	354th Avenue/6803	X38	County	Addition of 6' wide paved shoulders
	X38	J48	U.S. 61	County	Addition of 6' wide paved shoulders
	61	X38	Fort Madison	State	Addition of 6' wide paved shoulders
	61	Fort Madison	X23	State	Addition of 6' wide paved shoulders
	X23	U.S. 61	U.S. 61	County	Addition of 6' wide paved shoulders
	61	X23	Highway 404	State	Addition of 6' wide paved shoulders
	404	U.S. 61	Montrose	State	Addition of 6' wide paved shoulders
	X28 Bicycle Lanes	Montrose	Keokuk	County	Completed bicycle lanes

Table 4.5. MRT Corridor Lengths by Improvement Type: Allamakee to Clinton Counties

County	Road Number or Trail/Lane Name	Length of Shoulder Paving for Lanes (mi.)	Length of Structural Accommodations (ft.)	Length of Structural Accommodations (mi.)	Estimated Length of Trail (mi.), Rural Areas	Total Length of Segment (mi.)
Allamakee	26	(programmed)				9.88
	X52	10.36	413	0.078		12.71
	364	5.99	196	0.037		6.03
	Trail of Two Cities MRT Connection				3.89	3.89
Clayton	Trail of Two Cities MRT Connection				3.32	3.32
	Trail of Two Cities				1.78	1.78
	Trail of Two Cities MRT Connection				0.7	0.70
	340	1.50				1.50
	X56	8.33				15.04
	52	3.43				4.79
	C9Y	11.34	100	0.019		11.36
Dubuque	C9Y	3.25				3.25
	Reigler Road/90E1	2.86				2.86
	C65	2.42				2.42
	C9Y	3.86				3.86
	Heritage Trail MRT Connection				0.74	0.74
	Heritage Trail Extension				4.76	4.76
	Olde Massey Rd./88E3	0.97				0.97
	52	3.92	32	0.006		6.49
Jackson	52 (Co. Border to St. Donatus)	1.86				1.86
	52 (St. Donatus to Bellevue)	7.09	807	0.153		9.06
	52 (Bellevue to Z 40)	10.71	2,061	0.390		11.10
	Z40	6.39				6.39
Clinton	Z40	1.02				1.02
	E44	3.94	103	0.020		3.96
	Z50	2.57	127	0.024		2.59
	E50	2.75				2.75
	67	4.60	196	0.037		4.64
	F12	5.00	27	0.005		5.00
	Z36	7.07	70	0.013		7.08
	67	1.54	1,039	0.197		1.73

Table 4.6. MRT Corridor Lengths by Improvement Type: Scott to Lee Counties and Total

County	Road Number or Trail/Lane Name	Length of Shoulder Paving for Lanes (mi.)	Length of Structural Accommodations (ft.)	Length of Structural Accommodations (mi.)	Estimated Length of Trail (mi.), Rural Areas	Total Length of Segment (mi.)
Scott	67 (County Border to Le Claire)	6.65				6.67
	67 (Le Claire to Bettendorf)	1.74	142	0.027		1.77
	22	1.01				1.01
Muscatine	22	4.03	540	0.102		4.13
	Wildcat Den Avenue	0.81				0.81
	New Era Road	5.72				5.72
	Sweetland Road	1.49				1.49
	22	2.49				2.49
	X61	4.42				4.42
Louisa	X61	12.57	194	0.037		12.61
	E Avenue	1.38				1.38
	X61	1.59				1.59
	99	5.92	937	0.177		6.10
Des Moines	99	17.74	998	0.189		17.93
	X62	3.41	38	0.007		3.42
	Old U.S. Highway 61	1.40	80	0.015		1.42
	61	1.44	1,377	0.261		1.70
Lee	61	0.90	690	0.131		1.03
	X50	0.07				0.07
	354th Avenue/6803	0.53				0.53
	J48	2.78	274	0.052		2.83
	X38	4.35				4.35
	U.S. 61	0.69				0.69
	U.S. 61	1.27				1.27
	X23	2.24				2.24
	U.S. 61	5.54	800	0.152		5.69
	404	0.51				0.51
	X28 Bicycle Lanes					6.84
TOTAL		205.45	6,070	2.129	15.19	254.23

Table 4.7. MRT Costs by Corridor and Improvement Type: Allamakee to Clinton Counties

County	Road Number or Trail/Lane Name	Est. Cost of Shoulder Paving for Lanes	Est. Cost of Structural Accommodations	Est. Cost of Trail, Rural Areas	Subtotal Cost	Other Costs	Contingency Costs	Total Costs
Allamakee	26			(programmed)				
	X52	\$1,108,817	\$123,900		\$1,232,717	\$123,272	\$184,908	\$1,540,897
	364	\$641,131	\$58,800		\$699,931	\$69,993	\$104,990	\$874,914
	Trail of Two Cities Connection			\$331,988	\$331,988	\$33,199	\$49,798	\$414,985
Clayton	Trail of Two Cities Connection			\$283,342	\$283,342	\$28,334	\$42,501	\$354,178
	Trail of Two Cities			(funding available)				
	Trail of Two Cities Connection			\$59,741	\$59,741	\$5,974	\$8,961	\$74,676
	340	\$160,179			\$160,179	\$16,018	\$24,027	\$200,224
	X56	\$891,738			\$891,738	\$89,174	\$133,761	\$1,114,673
	52	\$367,010			\$367,010	\$36,701	\$55,052	\$458,763
	C9Y	\$1,213,600	\$30,000		\$1,243,600	\$124,360	\$186,540	\$1,554,501
Dubuque	C9Y	\$348,178			\$348,178	\$34,818	\$52,227	\$435,223
	Reigler Road/90E1	\$305,913			\$305,913	\$30,591	\$45,887	\$382,391
	C65	\$259,368			\$259,368	\$25,937	\$38,905	\$324,210
	C9Y	\$412,913			\$412,913	\$41,291	\$61,937	\$516,141
	Heritage Trail MRT Connection			\$63,155	\$63,155	\$6,315	\$9,473	\$78,943
	Heritage Trail Extension			(programmed)				
	Olde Massey Road/88E3	\$103,790			\$103,790	\$10,379	\$15,569	\$129,738
	52	\$419,541	\$9,600		\$429,141	\$42,914	\$64,371	\$536,426
Jackson	52 (County Border to St. Donatus)	\$198,913			\$198,913	\$19,891	\$29,837	\$248,641
	52 (St. Donatus to Bellevue)	\$758,112	\$242,100		\$1,000,212	\$100,021	\$150,032	\$1,250,265
	52 (Bellevue to Z40)	\$1,145,934	\$618,300		\$1,764,234	\$176,423	\$264,635	\$2,205,292
	Z40	\$683,623			\$683,623	\$68,362	\$102,543	\$854,529
Clinton	Z40	\$109,033			\$109,033	\$10,903	\$16,355	\$136,291
	E44	\$421,312	\$30,900		\$452,212	\$45,221	\$67,832	\$565,265
	Z50	\$274,770	\$38,100		\$312,870	\$31,287	\$46,931	\$391,088
	E50	\$294,571			\$294,571	\$29,457	\$44,186	\$368,214
	67	\$492,187	\$58,800		\$550,987	\$55,099	\$82,648	\$688,734
	F12	\$534,881	\$8,100		\$542,981	\$54,298	\$81,447	\$678,726
	Z36	\$756,034	\$21,000		\$777,034	\$77,703	\$116,555	\$971,293
	67	\$164,483	\$311,700		\$476,183	\$47,618	\$71,427	\$595,228

Table 4.8. MRT Costs by Corridor and Improvement Type: Scott to Keokuk Counties and Total

County	Road Number or Trail/Lane Name	Est. Cost of Shoulder Paving for Lanes	Est. Cost of Structural Accommodations	Est. Cost of Trail, Rural Areas	Subtotal Cost	Other Costs	Contingency Costs	Total Costs
Scott	67 (County Border to Le Claire)	\$711,550			\$711,550	\$71,155	\$106,733	\$889,438
	67 (Le Claire to Bettendorf)	\$186,084	\$42,600		\$228,684	\$22,868	\$34,303	\$285,855
	22	\$108,391			\$108,391	\$10,839	\$16,259	\$135,489
Muscatine	22	\$431,181	\$162,000		\$593,181	\$59,318	\$88,977	\$741,476
	Wildcat Den Avenue	\$87,098			\$87,098	\$8,710	\$13,065	\$108,873
	New Era Road	\$611,933			\$611,933	\$61,193	\$91,790	\$764,916
	Sweetland Road	\$158,895			\$158,895	\$15,890	\$23,834	\$198,619
	22	\$266,002			\$266,002	\$26,600	\$39,900	\$332,503
	X61	\$472,512			\$472,512	\$47,251	\$70,877	\$590,640
	X61	\$1,345,018	\$58,200		\$1,403,218	\$140,322	\$210,483	\$1,754,022
	E Avenue	\$147,553			\$147,553	\$14,755	\$22,133	\$184,441
Des Moines	X61	\$170,237			\$170,237	\$17,024	\$25,536	\$212,796
	99	\$633,926	\$281,100		\$915,026	\$91,503	\$137,254	\$1,143,782
	99	\$1,898,392	\$299,400		\$2,197,792	\$219,779	\$329,669	\$2,747,240
	X62	\$364,742	\$11,400		\$376,142	\$37,614	\$56,421	\$470,177
	Old U.S. Highway 61	\$150,212	\$24,000		\$174,212	\$17,421	\$26,132	\$217,765
Lee	61	\$153,888	\$413,100		\$566,988	\$56,699	\$85,048	\$708,735
	61	\$96,120	\$207,000		\$303,120	\$30,312	\$45,468	\$378,900
	X50	\$7,276			\$7,276	\$728	\$1,091	\$9,095
	354th Avenue/6803	\$57,138			\$57,138	\$5,714	\$8,571	\$71,423
	J48	\$297,150	\$82,200		\$379,350	\$37,935	\$56,903	\$474,188
	X38	\$464,915			\$464,915	\$46,492	\$69,737	\$581,144
	U.S. 61	\$73,830			\$73,830	\$7,383	\$11,075	\$92,288
	U.S. 61	\$135,676			\$135,676	\$13,568	\$20,351	\$169,595
	X23	\$239,359			\$239,359	\$23,936	\$35,904	\$299,199
	U.S. 61	\$592,939	\$240,000		\$832,939	\$83,294	\$124,941	\$1,041,174
	404	\$54,570			\$54,570	\$5,457	\$8,186	\$68,213
	X28 Bicycle Lanes							
	TOTAL	\$21,982,617	\$3,372,300	\$738,226	\$26,093,143	\$2,609,314	\$3,913,972	\$32,616,429

Table 4.9. MRT Costs by County: Shoulder Paving and Structures

Costs by County	Shoulder Paving (mi.)	Shoulder Paving Costs	Structures (ft.)	Structures (mi.)	Structures Costs
Allamakee	16.355	\$1,749,949	609	0.115	\$182,700
Clayton	24.603	\$2,632,527	100	0.019	\$30,000
Dubuque	17.516	\$1,874,206	32	0.006	\$9,600
Jackson	26.049	\$2,787,190	2838	0.538	\$851,400
Clinton	19.627	\$2,100,107	1562	0.296	\$468,600
Scott	9.402	\$1,006,025	142	0.027	\$42,600
Muscatine	18.950	\$2,027,621	540	0.102	\$162,000
Louisa	21.465	\$2,296,733	1131	0.214	\$339,300
Des Moines	23.999	\$2,567,876	2493	0.472	\$747,900
Lee	18.991	\$2,032,065	1118	0.212	\$335,400
Total	196.956	\$21,074,298	10565	2.001	\$3,169,500

Table 4.10. MRT Costs by County: Trail Construction and Estimated Total Costs

Costs by County	Off-Road Trail (mi.)	Trail Costs	Subtotal Costs	Other Costs	Contingency Costs	Total Costs
Allamakee	3.91	\$333,695	\$2,266,344	\$226,634	\$339,952	\$2,832,929
Clayton	4.01	\$342,229	\$3,004,757	\$300,476	\$450,714	\$3,755,946
Dubuque	0.73	\$62,301	\$1,946,107	\$194,611	\$291,916	\$2,432,633
Jackson	0	\$0	\$3,638,590	\$363,859	\$545,788	\$4,548,237
Clinton	0	\$0	\$2,568,707	\$256,871	\$385,306	\$3,210,884
Scott	0	\$0	\$1,048,625	\$104,863	\$157,294	\$1,310,782
Muscatine	0	\$0	\$2,189,621	\$218,962	\$328,443	\$2,737,026
Louisa	0	\$0	\$2,636,033	\$263,603	\$395,405	\$3,295,041
Des Moines	0	\$0	\$3,315,776	\$331,578	\$497,366	\$4,144,720
Lee	0	\$0	\$2,367,465	\$236,746	\$355,120	\$2,959,331
Total	8.65	\$738,226	\$24,982,023	\$2,498,202	\$3,747,303	\$31,227,529

Table 4.11. Estimated Subtotal, Other, Contingency, and Total Costs of the Iowa MRT

Est. Cost of Shoulder Paving for Lanes	Est. Cost of Structural Accommodations	Est. Cost of Trail, Rural Areas	Subtotal Cost	Other Costs	Contingency Costs	Total Costs
\$21,982,617	\$3,372,300	\$738,226	\$26,093,143	\$2,609,314	\$3,913,972	\$32,616,429

Table 4.12. Individual County Jurisdictional Estimated Costs of the Iowa MRT

County	Monetary Responsibility
Allamakee	\$1,995,882
Clayton	\$3,098,028
Dubuque	\$1,866,646
Jackson	\$854,529
Clinton	\$3,110,877
Scott	\$0
Muscatine	\$1,663,048
Louisa	\$2,151,259
Des Moines	\$687,942
Lee	\$1,435,049

Table 4.13. State Jurisdictional Estimated Costs of the Iowa MRT by County

County	Monetary Responsibility
Allamakee	\$874,914
Clayton	\$658,987
Dubuque	\$536,426
Jackson	\$3,704,198
Clinton	\$1,283,962
Scott	\$1,310,782
Muscatine	\$1,073,979
Louisa	\$1,143,782
Des Moines	\$3,455,975
Lee	\$1,750,170

Recommended Prioritization

The Iowa Mississippi River Trail will connect existing, programmed, or planned bicycle facilities and routes currently used by local cyclists by adding new bicycle trails or lanes to form a comprehensive trail network. The suggested new bicycle trails or lanes are classified by time of recommended project completion to generate maximum benefits. Recommended prioritization is described in this section.

Recommended Demonstration Projects

The MRT projects to be accomplished first should have a great impact on the amount of operable trail in the overall MRT. “Demonstration projects” will be outlined and recommended for priority completion in this section. These projects will be located near existing or programmed bicycle facilities (likely in larger urban areas), and their completion will result in longer cycling corridors, making an immediate impact by

expanding needed bicycle facilities to larger populations. In addition, these projects will be instrumental in applying for federal funding for the MRT in Iowa, for these projects showcase high-impact trail locations that will show immediate results. Another guiding factor to developing the demonstration MRT projects is the level of improvements required to make the corridor suitable for bicycles. Off-road trail building encompasses a larger amount of time, money, and effort than shoulder improvements for bicycle lanes; therefore, the MRT demonstration projects should be corridors that need bicycle lanes.

The few MRT demonstration projects will greatly influence public opinion about the complete trail. If the public favors these demonstration projects, citizens could be more likely to support future trail development. The demonstration projects should connect with current facilities and produce a significantly long and scenic trail with connections to the Mississippi River, cities, and popular amenities.

The demonstration projects found below refer to corridors near bicycle facilities or roads currently used by local cyclists as bicycle facilities. These are the corridors most recommended for initial projects, for their completion will immediately extend trail networks or make current networks safer. The corridors on which the demonstration projects are found require varied amounts of improvements to become adequate for MRT bicycle lanes. The recommended demonstration projects are as follows, in corridor order from north to south:

1. Allamakee County: County Road X52, Lansing to Harpers Ferry, plus structural accommodations
2. Scott County: U.S. Highway 67, Le Claire to Bettendorf, plus structural accommodations
3. Muscatine County: State Highway 22, Scott County border to Wildcat Den Avenue, plus structural accommodations

The three demonstration projects would each promote their local trail or bicycle route networks through their unique benefits. These projects have been recommended as demonstration projects over other potential shoulder paving projects due to their locations and special amenities for the MRT. The resulting bicycle facilities networks may provide cyclist access in rural areas, but these portions would need attention from municipalities before they could become complete routes. Notably, the cities of Le Claire, Bettendorf, and Buffalo may have gaps without MRT facilities after their respective planned and programmed urban bicycle facilities updates. These cities should route the MRT from existing urban bicycle facilities to the MRT bicycle lanes onto urban streets deemed safe for bicycle travel to connect to these demonstration projects.

An innate benefit of these three projects is their proximity to the Mississippi River. While all MRT corridors must be within 10 miles of the river, most sections of these routes run directly along the river and have beautiful river views. The demonstration projects encompass the pure definition of a river trail and would be a strong asset to the beginning steps of the Iowa MRT.

One demonstration project is located in Allamakee County and will extend bicycle lanes programmed on State Highway 26 to the next city on the MRT routing, by use of County Road X52, from the cities of Lansing to New Albin. Portions of X52 currently have 6-foot paved shoulders; therefore, this corridor requires only a partial shoulder paving project, striping, and signage to make it adequate for bicycle lanes. However, in addition to shoulder paving, this section requires small amounts of structural accommodations for the implementation of bicycle lanes.

Another recommended demonstration project involves an expansion of the extensive trail network in the Quad-Cities to the north on U.S. Highway 67. The Bi-State Regional Commission, the metropolitan planning organization for the Quad-Cities area, has planned new bicycle facilities within the urban area to fill in trail network gaps. Upon completion, bicycle facilities should reach from Bettendorf, through Davenport, to the city of Buffalo. The Quad-Cities trail network can also be extended north to other Quad-Cities area cities. The cities of Princeton and LeClaire have planned bicycle facilities to extend along the river. Therefore, a beneficial demonstration project in this area could be the construction of bicycle lanes to connect Bettendorf to LeClaire. The U.S. 67 corridor between these cities currently has segments with 6-foot paved shoulders, so this corridor only requires a partial, rather than complete, shoulder paving project to create bicycle lanes. This will result in a less costly project than a corridor that requires paved shoulders to be constructed along its entirety.

The final demonstration project will connect existing cycling routes in Scott and Muscatine Counties. Creating bicycle lanes on State Highway 22 in Muscatine County from Wildcat Den Avenue to the Scott County border would continue an extensive existing, programmed, and planned trail network in Scott County to Muscatine County. Although the Highway 22 corridor needs a complete shoulder paving project, it is relatively short, less than five miles long. This project also requires additional structural accommodations to place bicycle lanes on structures on Highway 22. The additional work of this project is overshadowed by the benefits of connecting the Quad-Cities trail system to the routes favored by Muscatine County cyclists, for it will open up a larger network of bicycle facilities to cyclists.

Remaining Priorities for Shoulder Paving Projects

The demonstration projects should be the first projects completed for the Iowa portion of the MRT. The remaining projects have been grouped based on the type of project needed to make the road segment suitable for bicycle lanes. The types of projects recommended as “initial priorities,” or projects to complete after the demonstration projects, are partial shoulder paving projects, complete shoulder paving projects for corridors under five miles in length, and complete shoulder paving projects for corridors over five miles in length.

Priorities for Partial Shoulder Paving Projects

This section discusses projects that only require portions of the corridor to be paved for bicycle lanes. Some of these projects may prove useful as initial priorities after the demonstration projects due to the reduced amount of construction needed to complete these tasks. However, these projects will be beneficial as starting projects only if they can provide an important link in the trail network when completed.

The initial priorities for partial shoulder paving projects are as follows:

1. Clayton County: County Road X56, State Highway 340 to Guttenberg
2. Clayton County: U.S. Highway 52, Guttenberg to Millville
3. Dubuque County: U.S. Highway 52, Olde Massey Road to Jackson County border, plus structural accommodations
4. Jackson County: U.S. Highway 52, Saint Donatus to Bellevue, plus structural accommodations

The partial shoulder paving projects only require paved shoulders on select portions of the corridor for bicycle lanes. Some of these corridors have special characteristics that make them a better choice for initial priorities projects. For instance, the County Road X52 corridor demonstration project in Allamakee County will extend the programmed bicycle lane from New Albin to Lansing to Clayton. When the cities of New Albin and Lansing each designate their MRT urban links, this new network will meet the Minnesota MRT across the border at New Albin.

However, in comparison to the County Road X52 corridor in Allamakee County, other corridors for partial shoulder paving projects may not offer the same remarkable amenities to the MRT when completed. The four corridors of X56 and U.S. Highway 52 in Clayton County, U.S. 52 in Dubuque County, and U.S. 52 in Jackson County all connect small cities to other corridors with no notable existing or programmed bicycle facilities to directly access. While these corridors are essential to the overall MRT, their individual significance to the trail network is far overshadowed by the significance of the X52 segment in Allamakee County.

Priorities for Complete Shoulder Paving Projects

The next two subsections describe initial priorities for complete shoulder paving projects for different project corridor lengths. The first examines corridors under five miles long that need complete shoulder paving, and the other analyzes corridors over five miles long with the same criteria. The complete shoulder paving projects generally will have increased time and cost of construction as compared to other shoulder improvement types. However, if a complete shoulder paving project should prove more beneficial to the trail network, its benefits could outweigh the costs of improving that corridor before other partial shoulder paving projects.

Corridors for Complete Shoulder Paving Projects: Shorter Lengths (less than five miles)

The complete shoulder paving projects for corridors less than five miles in length are as follows:

1. Clayton County: State Highway 340, McGregor to County Road X56
2. Dubuque County: County Road C9Y, Clayton County border to Reigler Road (90E1)
3. Dubuque County: Reigler Road (90E1), County Road C9Y to C65
4. Dubuque County: County Road C65, Reigler Road to Sherrill
5. Dubuque County: County Road C9Y, Sherrill to Sageville
6. Dubuque County: Olde Massey Road, Mines of Spain to U.S. Highway 52
7. Jackson County: U.S. Highway 52, Dubuque County border to St. Donatus
8. Clinton County: County Road Z40, Jackson County border to County Road E44
9. Clinton County: County Road E44, County Road Z40 to Z50, plus structural accommodations
10. Clinton County: County Road Z50, County Road E44 to E50, plus structural accommodations
11. Clinton County: County Road E50, County Road Z50 to U.S. Highway 67
12. Clinton County: U.S. Highway 67, County Road E50 to Clinton, plus structural accommodations
13. Clinton County: U.S. Highway 67, County Road Z36 to Scott County border, plus structural accommodations
14. Scott County: State Highway 22, Buffalo to Muscatine County border
15. Muscatine County: Wildcat Den Avenue, State Highway 22 to New Era Road
16. Muscatine County: New Era Road, Wildcat Den Avenue to Sweetland Road
17. Muscatine County: Sweetland Road, New Era Road to State Highway 22
18. Muscatine County: County Road X61, Muscatine to Louisa County border
19. Louisa County: E Avenue, County Road X61 to X61
20. Louisa County: County Road X61, E Avenue to State Highway 99
21. Des Moines County: County Road X62, Burlington to Old U.S. Highway 61, plus structural accommodations
22. Des Moines County: Old U.S. Highway 61, County Road X62 to U.S. Highway 61, plus structural accommodations
23. Des Moines County: U.S. Highway 61, Old U.S. Highway 61 to Lee County border, plus structural accommodations
24. Lee County: U.S. Highway 61, Des Moines County border to County Road X50, plus structural accommodations
25. Lee County: County Road X50, U.S. Highway 61 to 354th Avenue/6803
26. Lee County: 354th Avenue/6803, County Road X50 to J48
27. Lee County: County Road J48, 354th Avenue/6803 to County Road X38, plus structural accommodations
28. Lee County: County Road X38, County Road J48 to U.S. Highway 61
29. Lee County: U.S. Highway 61, County Road X38 to Fort Madison
30. Lee County: U.S. Highway 61, Fort Madison to County Road X23
31. Lee County: County Road X23, U.S. Highway 61 to U.S. 61
32. Lee County: State Highway 404, U.S. Highway 61 to Montrose

There are many corridors classified as shorter segments of complete shoulder paving projects for the Iowa MRT. For this reason, the impacts of each individual corridor can be more easily measured if grouped into subcategories by the various benefits each offers. The characteristics of the corridors used for this analysis were the nearness of each corridor to other bicycle facilities or large cities.

- *Proximity of each corridor to other bicycle facilities.* Connecting existing or programmed bicycle facilities through select shoulder paving projects is a vital focus of MRT demonstration projects. The corridors that best represent this idea include Olde Massey Road in Dubuque County, all corridors in Muscatine County, and State Highway 404 in Montrose. Olde Massey Road would provide an extension of the programmed Heritage Trail extension in the city of Dubuque and the Mines of Spain to U.S. Highway 52. Similarly, shoulder paving on all the Muscatine County corridors would further expand the recommended demonstration projects and existing bicycle facilities in Scott and Muscatine Counties, providing the city of Muscatine designates an MRT link within municipal boundaries. Bicycle lanes on State Highway 404 would continue the existing bicycle lanes from Keokuk to Montrose.
- *Proximity of each corridor to large cities.* Many large cities along the Mississippi River in Iowa currently have some sort of bicycle facility that can be utilized by the MRT. The corridor favored to be a MRT demonstration project on this basis is U.S. Highway 67 in Clinton County, from County Road E50 to the city of Clinton. This segment will provide a link from rural Clinton County to North Clinton and Eagle Point Park.
- *Other corridors not recommended for immediate development.* The remaining 26 corridors in this section not listed as vital links between bicycle facilities or large cities are the corridors not recommended for MRT starting projects. While these corridors are essential for the completion of the Iowa MRT, other recommended Iowa MRT corridors would provide more benefits if completed first. Notably, no Lee County U.S. Highway 61 corridors in this section are recommended to be starting MRT projects, because an extensive expansion of U.S. 61 in this area is currently being planned. This expansion will result in the U.S. 61 corridor being unsuitable for bicycle lanes. Therefore, the future recommendation for these corridors is to find another solution to fill this gap in the MRT, perhaps through off-road trails or levee trails.

Corridors for Complete Shoulder Paving Projects: Longer Lengths (greater than five miles)

The complete shoulder paving projects on corridors longer than five miles are as follows:

1. Allamakee County: State Highway 364, Clayton to State Highway 76, plus structural accommodations

2. Clayton County: County Road C9Y, Millville to Dubuque County border, plus structural accommodations
3. Jackson County: U.S. Highway 52, Bellevue to County Road Z40, plus structural accommodations
4. Jackson County: County Road Z40, U.S. Highway 52 to Clinton County border
5. Clinton County: County Road F12, Clinton to County Road Z36, plus structural accommodations
6. Clinton County: County Road Z36, County Road F12 to U.S. Highway 67, plus structural accommodations
7. Scott County: U.S. Highway 67, Clinton County border to Le Claire
8. Louisa County: County Road X61, Muscatine County border to E Avenue
9. Louisa County: State Highway 99, County Road X61 to Des Moines County border, plus structural accommodations
10. Des Moines County: State Highway 99, Louisa County border to Burlington, plus structural accommodations
11. Lee County: U.S. Highway 61, County Road X23 to State Highway 404, plus structural accommodations

There are many corridors classified as longer segments of complete shoulder paving projects for the Iowa MRT. The impacts of these corridor projects can be more easily measured to determine project significance if grouped into subcategories by the various benefits each offers. The corridor characteristics used were the nearness of each corridor to other bicycle facilities or large cities.

- *Proximity of each corridor to other bicycle facilities.* The U.S. Highway 67 corridor in Scott County is the sole corridor in this category recommended as a demonstration project, due to its ability to connect to bicycle facilities. As previously stated, the Quad-Cities area has an extensive network of existing and programmed bicycle facilities. The highest recommended demonstration projects will extend the Quad-Cities network from Muscatine to Le Claire; this U.S. 67 shoulder paving project will extend the network further, from Muscatine to the southern Clinton County border.
- *Proximity of each corridor to large cities.* Two corridors needing complete shoulder paving projects of over five miles are recommended to be MRT starting projects based upon their nearness to large cities. The first corridor is Clinton County Road F12, from the city of Clinton to County Road Z36. This road segment will create a bicycle-accessible link from Clinton to the unincorporated town of Elvira, providing Elvira residents access to Clinton trails and bicycle commuting possibilities. The second recommended route is Des Moines County State Highway 99, from the Louisa County border to the city of Burlington. While both of these routes require additional structural accommodations to create bicycle lanes, they both provide needed safe bicycle access from major urban areas.
- *Other corridors not recommended for immediate development.* The remaining eight corridors in this section not listed as vital links between bicycle facilities or large cities are the corridors not recommended for MRT demonstration projects.

While these corridors are essential for the completion of the Iowa MRT, other recommended Iowa MRT corridors would provide more benefits as demonstration projects. Again, a Lee County U.S. Highway 61 corridor is located in the list of projects not recommended for near-term demonstration projects. The remaining non-recommended projects generally do not link important bicycle facilities, amenities, or other features that would benefit a large number of people if the project were carried out before other MRT corridors.

Priority of Iowa MRT Off-Road Trail Building Projects

The suitability assessment of each on-road route performed for this analysis resulted in a few notable gaps where no road was suitable to carry a bicycle lane. For this reason, the complete Iowa MRT routing includes two off-road trails. These off-road trails need to be constructed to provide a safe route for MRT cyclists, for the road network in these areas is highly inadequate for bicycles due to high traffic counts, high truck traffic, and other roadway characteristics.

The MRT off-road trails do need to be constructed for the trail to be complete. However, it is not recommended that either project be a demonstration project, because off-road trails require more resources and construction to complete than do bicycle lanes. Instead, these trails should be built as resources allow, and roughly at the same time as the segments of bicycle lane that abut the recommended trails. If the trails are built near the same time as these segments of bicycle lane, a longer segment of the MRT will be open sooner for use. However, as described previously, costs per mile for off-road trails are high, and securing the resources to complete these projects should be a priority for the continuation of the MRT.

The first recommended MRT off-road trail is in Allamakee and Clayton Counties, and is a link between State Highway 364 and State Highway 340 at the cities of Marquette and McGregor. This recommended trail is shown in Figure 3.1 in Chapter 3. The trail would bypass State Highway 76, a highly unsuitable route for bicycles. Highway 76 flows directly into Marquette and carries a high percentage of heavy truck traffic. The trail would also connect to the Trail of Two Cities, an intercity trail planned in Marquette and McGregor; the recommended trail would make a connection between Highway 364 and the north end of the Trail of Two Cities, and another connection between the south end of the Trail of Two Cities and Highway 340. The connector trail is recommended for construction near the time of construction of the Trail of Two Cities to create a much longer trail that links Marquette and McGregor to Effigy Mounds and Yellow River Forest.

The second recommended MRT off-road trail is in Dubuque County and is a link between the city of Sageville and the Heritage Trail. This recommended trail is shown in Figure 3.3 in Chapter 3. The route bypassed by this trail is State Highway 3, determined to be inadequate for bicycle lanes because of its high traffic volumes. This trail is recommended for construction near the time Dubuque constructs the extension of the

Heritage Trail. After both the Heritage Trail extension and the off-road connector trail are finished, MRT cyclists will have access to Sageville, Dyersville, Dubuque, the Mines of Spain, and all cities and amenities along the route. Because the Heritage Trail extension is a programmed project and the Trail of Two Cities is in the planning stages, the Dubuque County off-road trail may need to be built before the Trail of Two Cities connector off-road trail.

Recommended Alignment and Jurisdiction Considerations

The agency responsible for each potential Iowa MRT project differs by the jurisdiction of each roadway corridor. The rural road segments used in the Iowa MRT are county roads, state highways, or U.S. highways. Because of this, individual counties are responsible for MRT projects on county roads, and the Iowa DOT is responsible for MRT projects on both state and U.S. highways. Individual county maps showing MRT roadway jurisdictions are in Figures 3.11–3.20 in Chapter 3. The total Mississippi River Trail in Iowa is comprised of approximately 125 miles of county jurisdiction roads and 99 miles of state jurisdiction highways.

The corridors for the Iowa portion of the Mississippi River Trail have been carefully chosen for their accessibility, amenities, and safety. However, the route outlined in this plan is not static; the designated MRT route will change as trail development projects are completed. Also, the routes designated as the Iowa MRT may change over time with the development of new bicycle facilities. This means there may be temporary MRT routes in Iowa as the “final” alignment is built or changed to accommodate new segments.

Because the majority of the Iowa MRT will be on bicycle lanes, there is potential concern for cyclist safety, as cyclists will be using the same road facilities as vehicles. Although cyclists will travel in designated lanes separate from those of motorized vehicles, cyclist-vehicle conflict is still possible. Therefore, as the Iowa MRT develops, the development of off-road trails to replace sections of bicycle lanes should be encouraged to separate MRT cyclists from higher speed motorized vehicle traffic.

In conclusion, the MRT demonstration projects should be very carefully selected to maximize the potential benefits derived from the additions of bicycle facilities. The demonstration projects that benefit the largest number of people, connect important bicycle facilities, or provide needed safe bicycle access from urban areas should be considered for completion before all other MRT projects. Although each shoulder paving project is a vital link in the completion of the trail, the Iowa MRT initial demonstration projects can create an initial positive image of increasing bicycle accessibility in Eastern Iowa.

User Ratings of Iowa MRT Segments

Iowa's Mississippi River Trail will enable users to make intercity or intracity trips based upon their needs and cycling abilities and experience. Table 4.14 shows the recommended cyclist ratings for each section of the recommended Mississippi River Trail. These ratings were made by the Iowa MRT Advisory Committee through data analysis and field reviews of the recommended trail. The rating shown on the table is the lowest cyclist rating level that is recommended to use that bicycle facility. For example, if a trail segment is for a B-level cyclist, it is recommended for use by A and B cyclists, but not C cyclists.

The different levels of cyclist correspond to cycling abilities, cycling comfort, and age of cyclist. The A-level cyclist is an adult rider, has experience with road cycling, and is able to bear the physical challenge of large changes in elevation and other such hazards. The B-level cyclist is an average adult rider who may not be able to cycle as readily on major obstacles (such as steep elevations) but who can understand and be prepared for the potential hazards of on-road cycling. C-level cyclists are non-experienced cyclists such as families or children with little to no road experience. Because this level of cyclist is more open to injury due to lack of experience, no on-road bicycle facilities (bicycle lanes) of the Iowa MRT are recommended for use by C-level cyclists or children, even with adult supervision. Children and families are recommended to use MRT off-road trails in rural areas rather than bicycle lanes. Based on Tables 4.14 and 4.15, 23.94 miles of the recommended MRT are suitable for A-level cyclists only, approximately 209 miles are suitable for A- or B-level cyclists only, and 15.19 miles are suitable for all cyclists, including C-level cyclists. Because A-level cyclists are experienced cyclists, they can ride on all levels of the MRT. B-level cyclists are not as advanced and should ride only on B- and C-level facilities, or approximately 224 miles of the MRT. C-level cyclists are recommended to ride only on C-level trails, or 15.19 miles of the MRT.

Table 4.14. Iowa MRT User Ratings by Trail Segment: Allamakee to Clinton Counties

County	Road Number or Trail/Lane Name	From (N or E)	To (S or W)	User Rating
Allamakee	26	New Albin	Lansing	B
	X52	Lansing	Clayton	A
	364	Clayton	Highway 76	A
	Trail of Two Cities MRT Connection	State 364	Clayton Co. Border	C
	Trail of Two Cities MRT Connection	Allamakee County Border	Trail of Two Cities	C
	Trail of Two Cities	T of TC MRT Connection	T of TC MRT Connection	C
	Trail of Two Cities MRT Connection	Trail of Two Cities	Highway 340	C
Clayton	340	McGregor	X56	B
	X56	Highway 340	Guttenberg	B
	52	Guttenberg	Millville	B
	C9Y	Millville	Dubuque County Border	B
Dubuque	C9Y	Clayton County Border	Reigler Road/90E1	B
	Reigler Road/90E1	C9Y	C65	B
	C65	Reigler Road/90E1	Sherrill	B
	C9Y	Sherrill	Sageville	B
	Heritage Trail MRT Connection	C9Y	Heritage Trail Extension	C
	Heritage Trail Extension	H.T. MRT Extension	Dubuque	C
	Olde Massey Road/88E3	Mines of Spain	U.S. 52	B
	52	Olde Massey Road	Jackson County Border	B
Jackson	52	Dubuque County Border	St. Donatus	B
	52	St. Donatus	Bellevue	B
	52	Bellevue	Z40	B
	Z40	U.S. 52	Clinton County Border	B
Clinton	Z40	Jackson County Border	E44	B
	E44	Z40	Z50	B
	Z50	E44	E 50	B
	E50	Z50	U.S. 67	B
	67	E50	Clinton	B
	F12	Clinton	Z36	B
	Z36	F12	U.S. 67	B
	67	Z36	Scott County Border	B

Table 4.15. Iowa MRT User Ratings by Trail Segment: Scott to Lee Counties

County	Road Number or Trail/Lane Name	From (N or E)	To (S or W)	User Rating
Scott	67	Clinton County Border	Le Claire	B
	67	Le Claire	Bettendorf	B
	22	Buffalo	Muscatine County Border	B
Muscatine	22	Scott County Border	Wildcat Den Avenue	B
	Wildcat Den Avenue	Highway 22	New Era Road	B
	New Era Road	Wildcat Den Avenue	Sweetland Road	B
	Sweetland Road	New Era Road	Highway 22	B
	22	Sweetland Road	Muscatine	B
	X61	Muscatine	Louisa County Border	B
Louisa	X61	Muscatine County Border	E Avenue	B
	E Avenue	X61	X61	B
	X61	E Avenue	Highway 99	B
	99	X61	Des Moines County Border	B
Des Moines	99	Louisa County Border	Burlington	B
	X62	Burlington	Old U.S. Highway 61	B
	Old U.S. Highway 61	X62	U.S. 61	B
	61	Old U.S. Highway 61	Lee County Border	A
Lee	61	Des Moines County Border	X50	A
	X50	U.S. 61	354th Avenue/6803	B
	354th Avenue/6803	X50	J48	B
	J48	354th Avenue/6803	X38	B
	X38	J48	U.S. 61	B
	61	X38	Fort Madison	A
	61	Fort Madison	X23	A
	X23	U.S. 61	U.S. 61	B
	61	X23	Highway 404	A
	404	U.S. 61	Montrose	A
	X28 Bicycle Lanes	Montrose	Keokuk	B